



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

SW

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,799	10/16/2003	Daniel A. Gutknecht	H0005572	7932

7590 12/08/2004

Ephraim Starr, Division General Counsel
Honeywell International Inc.
23326 Hawthorne Boulevard, Suite #200
Torrance, CA 90505

EXAMINER

TRIEU, THAI BA

ART UNIT	PAPER NUMBER
----------	--------------

3748

DATE MAILED: 12/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

d3

Office Action Summary	Application No. 10/686,799	Applicant(s) GUTKNECHT, DANIEL A.	
	Examiner Thai-Ba Trieu	Art Unit 3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 and 33-37 is/are rejected.
- 7) ☒ Claim(s) 32 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is in response to the Amendment filed on October 07, 2004. Applicant's cooperation in correcting the informalities in the specification is appreciated. Applicant's cooperation in amending the claims to overcome the claim objections relating to informalities as well as indefinite claim language is also appreciated. Claim 8 is amended, claims 21-26 were cancelled, and claims 29-37 were added.

Applicant's arguments, set forth on Page 14-17, with respect to the rejection(s) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is set forth below.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims **1-20, and 27-28** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically,

- In claim 1, line 9; claim 2, lines 6-7; claim 18, lines 18-19, claim 9, line 7; claim 16, lines 12-13; claim 27, lines 11-12; claim 28, lines 6-7, the recitation of ***"significant thrust loading"*** renders the claims indefinite, since it is not clear that, how much the thrust is to be significant, or what is the level of thrust is to be significant. Accordingly, applicant should define or clarify the level of "significant thrust loading".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3, 8-9, 16, 27-28, and 31 are rejected under 35 U.S.C. 102(e) as best understood as being anticipated by Ward (Patent Number 6,709,160 b!).

Regarding claims 1, 3, and 31, Ward discloses a shaft mountable member (40, 42, 44, 46) for mounting on a rotatable shaft (26) and adjacent a face of a second member (Not Numbered), the shaft mountable member comprising:

a body portion defining a first side, a second side, and a bore extending between the first and second sides for receiving the shaft (26) therethrough (See Figure 2),

wherein the first side defines a plurality of grooves (74, 76) extending radially between the bore and an outer perimeter of the first side, each of the grooves providing a fluid passage between the bore and the outer perimeter such that fluid is communicated between the bore and the outer perimeter through the grooves without generating significant thrust loading on the second member (See Figures 2-5, Column 10, lines 66-67, and Column 11, lines 1-23); and

wherein the shaft mountable member is a bearing (40, 42, 44, 46) (See Figure 1).

Note that the recitation "without generating significant thrust loading ..." has not been given patentable weight because the recitation is considered as a desired result. In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977) and In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Additionally, the recitation "without generating significant thrust loading ..." is interpreted that a thrust loading is still generated as the fluid is flowing through the fluid passage between the bore and the outer perimeter; however, this thrust loading is not in a significant level.

Regarding claim 8, Ward discloses a turbocharger comprising:

a center housing (16) defining a cavity (Not Numbered) therethrough and a fluid passage (54) in communication with the cavity (See Figure 1);

at least one bearing (40, 42, 44, 46) positioned in the cavity of the center housing (16), the bore defining first and second opposite faces and defining a bore therethrough (See Figures 2-5);

a rotatable shaft (26) extending through the bore of the bearing and defining first and second ends at opposite sides of the center housing (16) (See Figure 1);

a compressor (28) connected to the first end of the shaft (26) and configured to rotate with the shaft (26), the compressor defining a face adjacent the first face of the at least one bearing (40, 44) (See Figure 1);

a turbine (24) connected to the second end of the shaft (26) and configured to rotate with the shaft (26) and the compressor (28), the turbine (24) defining a face adjacent the second face of the at least one bearing (42, 46);

wherein at least one of the faces of the bearing (40,42,44,46) defines a plurality of grooves (7, 76) extending radially between the bore and an outer perimeter of the bearing (40, 42, 44, 46), each of the grooves providing a fluid passage between the bore and the outer perimeter such that fluid is communicated between the bore and the outer perimeter through the grooves (74, 76) without generating significant thrust loading on the compressor and turbine (28, 24) (See Figure 1).

(See the note set forth above in the rejection of claim 1).

Regarding claim 16, Ward discloses an elongate shaft (26) for receiving a relatively rotatable member (40, 42, 44, 46), the shaft (26) comprising:

a first portion (the portion of the shaft being reduced of diameter of on the side of the compressor 28) having an outer surface defining a first diameter, the first portion being configured for receiving the rotatable member (40, 42, 44, 46) (See Figure 1);

a second portion (the portion of the shaft 26 having bearing 40, 42, 44, 46) having an outer surface defining a second diameter larger than the first diameter, the second portion being adjacent the first portion (See Figure 1);

a shoulder surface extending radially between the outer surfaces of the first and second portions, the shoulder surface defining a plurality of grooves (74, 76) extending radially between the outer surfaces of the first and second portions (See Figures 2-5),

Art Unit: 3748

each of the grooves providing a radial fluid passage between the shoulder surface and the relatively rotatable member (40, 42, 44, 46) such that fluid is communicated through the grooves (40, 42, 44, 46) without generating significant thrust loading between the shoulder surface and the relatively rotatable member (40, 42, 44, 46) (See Figures 1-5).

(See the note set forth above in the rejection of claim 1).

Regarding claim 27, Ward discloses a method for circulating between a shaft member (40, 42, 44, 46) on a shaft (26) an adjacent face of a second member (Not Numbered), the method comprising:

providing the shaft member (40, 42, 44, 46) on the shaft (26), the shaft member (40, 42, 44, 46) defining a first side, a second side, and a bore extending between the first and second sides for receiving the shaft therethrough (See Figure 1);

providing the second member (Not Numbered) adjacent the first side of the shaft member (40, 42, 44, 46) (See Figure 1); and

circulating a fluid radially through a plurality of grooves (74, 76) on the first side of the shaft (26) between the bore and an outer perimeter of the first side of the shaft member (40, 42, 44, 46) such that the fluid is communicated between the bore and the outer perimeter through the grooves (74, 76) without generating significant thrust loading between the shaft member (40, 42, 44, 46) and the second member (See Figures 1-5).

(See the note set forth above in the rejection of claim 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-6, 10-12, 17-19, and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward (Patent Number 6,709,160 B1), in view of design choice.

Ward discloses the invention as recited above; however, Ward fails to disclose at least 15 of the radial grooves on the first side each radial groove having a depth of less than about 0.025 inches, and the combined cross-sectional area of the grooves being at least about 0.003 square inches.

One having an ordinary skill in the bearing/washer art, would have found the number of the radial grooves being at least 15, the depth of each groove being less than about 0.025 inches, the combined cross-sectional area of the grooves being at least about 0.003 square inches as a matter of design choice depending on the device requirements. Moreover, there is nothing in the record, which establishes that the claimed dimensions and structure, presents a novel of unexpected result (See *In re Kuhle*, 526 F. 2d 553, 188 USPQ 7 (CCPA 1975)).

Claims 7, 13, 20, and 37 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ward (Patent Number 6,709,160 B1).

Claims 7, 13, 20, and 37, which recite the grooves being formed by pressing a die against the shaft mountable member, and the die defining a contoured surface corresponding to the shape of the grooves, are treated as product by process claims. The product by process claims are rejected over a prior art product of Ward, that appears to be identical, although produced by a different process, the burden is upon the applicants to overcome forward with evidence establishing a obvious difference between the two. See *In re Marosi*, 218 USPQ 289 (Fed. Cir. 1983).

Claims 7, 13, 20 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward (Patent Number 6,709,160 B1), in view of Miura et al. (Patent Number 6,698,097 B1).

Ward discloses the invention as recited above; however, ward fails to disclose the grooves being formed by pressing a die against the shaft mountable member, and the die defining a contoured surface corresponding to the shape of the grooves.

Miura teaches that it is conventional in the method for manufacturing bearing devices, to utilize the grooves (11) being formed by pressing a die against the shaft mountable member, and the die defining a contoured surface corresponding to the shape of the grooves (11) (See Abstract, Column 3, lines 4067, and Column 4, lines 1-8).

Art Unit: 3748

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized the grooves being formed by pressing a die against the shaft mountable member, and the die defining a contoured surface corresponding to the shape of the grooves, as taught by Miura, to minimize the wear resistance between the bearing surfaces, in the Ward device.

Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward (Patent Number 6,709,160 B1), in view of Yoshikawa et al. (Patent Number 5,174,733).

Ward discloses the invention as recited above, and further discloses each of the bearings defining a plurality of the grooves (68, 72) on a respective face and on each face thereof; however, Ward fails to disclose a spacer being positioned between the two bearings.

Yoshikawa teaches that it is conventional in the supercharger art, to utilize a spacer (17) being positioned between the two bearings (13, 14) (See Figures 1-2).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a spacer being positioned between the two bearings, as taught by Yoshikawa, to maintain the distance between the two bearings in the Ward turbocharger.

Allowable Subject Matter

Claims 2, 9, and 28-30 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claim 32 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments with respect to claims 1-37 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Svihla et al. (Patent Number 6,499,884 B1) discloses a bearing/seal member/assembly and mounting.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai-Ba Trieu whose telephone number is (571) 272-4867. The examiner can normally be reached on Monday - Thursday (6:30-5:00).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (571) 272-4859. The fax phone

Art Unit: 3748

number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TTB
December 3, 2004


Thai-Ba Trieu
Patent Examiner
Art Unit 3748